

KEY_Practice27_BarCharts_Histograms

December 10, 2021

1 Bar Charts and Histograms

As always, let's begin by importing our necessary packages and reading in/previewing our data. In this practice we will continue to explore the `titanic` dataset.

```
[1]: # import seaborn
import seaborn as sns
# set up for inline plotting
%matplotlib inline
```

```
[2]: # read in titanic data
titanic = sns.load_dataset("titanic")
# preview data
titanic.head()
```

```
[2]:   survived  pclass    sex  age  sibsp  parch   fare embarked  class \
0         0        3   male  22.0     1     0   7.2500         S  Third
1         1        1  female  38.0     1     0  71.2833         C  First
2         1        3  female  26.0     0     0   7.9250         S  Third
3         1        1  female  35.0     1     0  53.1000         S  First
4         0        3   male  35.0     0     0   8.0500         S  Third
```

```
   who  adult_male deck  embark_town  alive  alone
0  man         True  NaN  Southampton    no  False
1 woman        False   C   Cherbourg   yes  False
2 woman        False  NaN  Southampton   yes   True
3 woman        False   C   Southampton   yes  False
4  man         True  NaN  Southampton    no   True
```

1.1 Bar Charts

Generate a barplot of `survived` (y-axis) across `sex` (x-axis).

```
[3]: # barplot of sex vs survived
sns.barplot(x="sex", y = 'survived', data=titanic)
```

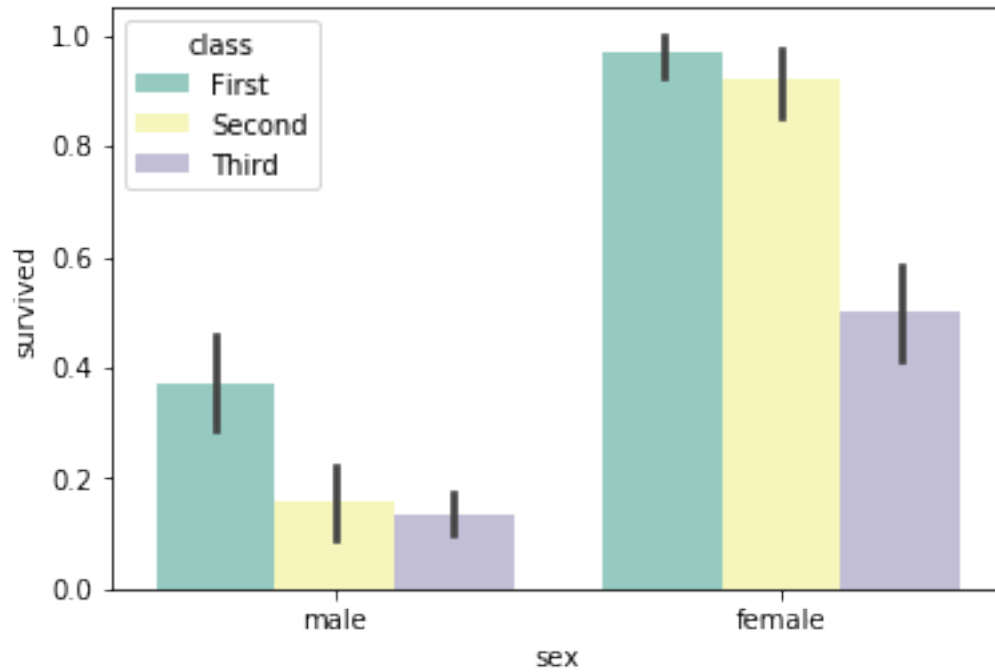
```
[3]: <matplotlib.axes._subplots.AxesSubplot at 0x118fea588>
```



Now, generate a barplot of `survived` (y-axis) across `sex` (x-axis), stratified by `class`. Choose your favorite color palette.

```
[4]: # barplot of sex vs survived stratified by class
sns.barplot(x="sex", y = 'survived', hue = "class", palette = "Set3", data=titanic)
```

```
[4]: <matplotlib.axes._subplots.AxesSubplot at 0x11c5e1be0>
```



1.2 Histograms

Generate a histogram of fare

```
[5]: #histogram of fare  
sns.distplot(titanic['fare'], kde=False)
```

```
[5]: <matplotlib.axes._subplots.AxesSubplot at 0x11c606fd0>
```



Now let's play with the `bins` parameter. First let's try a small number of bins, like 10:

```
[6]: #histogram of fare with 10 bins  
sns.distplot(titanic['fare'], kde=False, bins=10)
```

```
[6]: <matplotlib.axes._subplots.AxesSubplot at 0x11c723d30>
```



Now, let's try a larger number of bins, say 100.

```
[7]: #histogram of fare with 100 bins  
sns.distplot(titanic['fare'], kde=False, bins=100)
```

```
[7]: <matplotlib.axes._subplots.AxesSubplot at 0x11c843ac8>
```



As you can see, most of the values are pretty small (< 100 dollars), and there are only a few really large values. This is called a long-tailed distribution. Can you plot a histogram of just the fares that are less than 100 dollars?

```
[8]: #histogram of fare
sns.distplot(titanic.query('fare < 100')['fare'], kde=False)
```

```
[8]: <matplotlib.axes._subplots.AxesSubplot at 0x11cb77630>
```



1.3 Count Plots

Generate a count plot to visualize the distribution the `deck` variable across all passengers in our data set. Choose a sequential color palette.

```
[9]: # count plot of deck
sns.countplot(x="deck", palette = "Purples", data=titanic)
```

```
[9]: <matplotlib.axes._subplots.AxesSubplot at 0x11c87b668>
```



Now stratify your plot using the `class` variable. What kind of color palette is appropriate now?

```
[10]: # count plot of deck stratified by class
sns.countplot(x="deck", hue = "class", palette = "Set2", data=titanic)
```

```
[10]: <matplotlib.axes._subplots.AxesSubplot at 0x11ccf8198>
```




1.4 Congratulations!

You just completed all of the core lessons in the GWC Club! Now it's time to keep putting your data science skills to the test in your projects.